



# UNITED STATES PATENT AND TRADEMARK OFFICE

*cel*

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,089	04/02/2004	Ross Getty	CL2127 USNA	2276

23906 7590 05/03/2005

E I DU PONT DE NEMOURS AND COMPANY  
LEGAL PATENT RECORDS CENTER  
BARLEY MILL PLAZA 25/1128  
4417 LANCASTER PIKE  
WILMINGTON, DE 19805

EXAMINER

NGUYEN, HOAI AN D

ART UNIT PAPER NUMBER

2858

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/817,089	<b>Applicant(s)</b> GETTY ET AL.	
	<b>Examiner</b> Hoai-An D. Nguyen	<b>Art Unit</b> 2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-6 is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/18/04</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Claim Objections*

1. Claim 1 is objected to because of the following informalities: in line 3, "form" should be replaced with -- forms --. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petrenko (6,427,946) in view of Bonnell et al. (US 6,060,876).

In the present claims, the preamble does not give life, meaning and vitality to the claims since the respective bodies of the claims define a complete method that does not rely on the preamble for completeness.

Petrenko teaches systems and methods for modifying ice adhesion strength comprising:

With regard to claim 1, providing a compound (FIG. 12) which forms self-assembled monolayers, forming a self-assembled monolayer (FIG. 12, Self Assembling Monolayer (SAM) 3108) of the compound on a substrate (FIG. 12, gold layer 3106), and (FIG. 12, electrometer 3114) measuring the difference between the surface potential (interfacial charge) of the substrate and the surface potential of the self-assembled monolayer (Column 19, lines 42-61).

Art Unit: 2858

However, he does not specifically teach the following:

- The step of using surface scanning potential mapping.

However, Bonnell et al. teach a spatially resolved electromagnetic property measurement comprising:

With regard to claim 1, the step of measuring surface potential using surface scanning potential mapping (FIG. 5a, column 3, lines 22-25 and column 5, lines 3-10).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the systems and methods for modifying ice adhesion strength of Petrenko to incorporate the teaching of the step of measuring surface potential using surface scanning potential mapping taught by Bonnell et al. since Bonnell et al. teach that such an arrangement is beneficial to provide a successful technique to determine the individual values for grain boundary resistivity and capacitance as disclosed in column 7, lines 45-65.

With regard to claim 2, Petrenko teaches that the substrate (FIG. 12, gold layer 3106) is metallic (Column 19, lines 42-61).

With regard to claim 3, Petrenko discloses that the substrate (FIG. 12, gold layer 3106) is selected from the group consisting of Au, Ag, Pd, Pt, Cu, Al and Ni (Column 19, lines 42-61).

***Allowable Subject Matter***

4. Claims 4-6 are allowed.

The following is an examiner's statement of reasons for allowance:

With regard to claim 4, the prior art does not teach or render obvious the claimed method to determine the relative molecular electrical conductivities of a plurality of compounds as claimed including:

- Measuring the surface potential of each discrete area comprising the step of using surface scanning potential mapping for each self-assembled monolayer; and
- Comparing the measured surface potentials of the above measuring step to determine the relative molecular electrical conductivities of the plurality of compounds.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant's attention is invited to the followings whose inventions disclose similar devices.

- Albers (US 5,556,524) teaches electron-conducting molecular preparations.
- Chung et al. (US 5,683,569) teach method of sensing a chemical and sensor therefor.
- Plaxco et al. (US 6,432,723) teach biosensors utilizing ligand induced conformation changes.
- Sosnowski et al. (US 6,518,022) teach method for enhancing the hybridization efficiency of target nucleic acids using a self-addressable, self-assembling microelectronic device.

- Seki (US 6,624,071) teaches Systems and method for fabrication of a thin film pattern.
- Petrenko et al. (US 6,723,971) teach methods and structures for removing ice from surfaces.
- Dimitrakopoulos et al. (US 2004/0161873 A1) teach organic underlayers that improve the performance of organic semiconductors.

### CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoai-An D. Nguyen whose telephone number is 571-272-2170. The examiner can normally be reached on M-F (8:00 - 5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HADN

  
**ANJAN DEB**  
**PRIMARY EXAMINER**

Hoai-An D. Nguyen  
Examiner  
Art Unit 2858

HADN